SPECIFICATION AMENDMENTS

Please add the following specification amendments.

Item 5: Please replace the DESCRIPTION OF THE DRAWINGS section on page 4, lines 5-8 in the originally filed application with the following paragraph:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a flowchart for an embodiment of the present invention for fingerprinting a process tool.

FIG. 2 is a flowchart for an embodiment of the present invention for matching data sets.

Item 6: Please replace the paragraph on page 1, lines 9-18 in the originally filed application with the following paragraph:

The present application claims benefit of U.S. Patent Application No. 60/411,857, filed on 18 September ~~2003~~ 2002. The present application is related to U.S. Patent Application No. 09/643,614, filed on 22 August 2000, now U.S. Patent No. 6,691,068; U.S. Patent Application No. 09/816,648, filed on 22 March 2001, now U.S. Patent No 6,542,835; ~~U.S. Provisional Patent Application titled~~ U.S. Patent Application Serial No. 60/285,439, entitled "METHODS, APPARATUS, AND COMPUTER PROGRAM PRODUCTS FOR OBTAINING DATA FOR PROCESS OPERATION, OPTIMIZATION, MONITORING, AND CONTROL," filed 19 April 2001 ~~case Docket No. AWS-003~~. All of these applications are incorporated herein, in their entirety, by this reference.

Item 7: Please replace the paragraph on page 1, line 29 to page 2, line 10 in the originally filed application with the following paragraph:

Some processes for processing workpieces, such as electronic device manufacturing, are extremely ~~an extremely~~ complex. Considering, as an example, the application of fabricating electronic devices, the process may involve temperature sensitive ~~process~~

processes such as selective deposition and removal of various materials on a workpiece such as a silicon wafer. The manufacture of a typical integrated circuit or chip may involve hundreds of individual processing steps. In order to make integrated circuits reliably and economically, it is essential for each product wafer to experience the same conditions in each of the many process steps. Complex, expensive processing tools of various kinds perform these processing steps. A factory will typically have several tools of each type. As a result, it becomes very desirable to have all the tools of a given type ~~process~~ behave as similarly as possible, i.e. that each of these tools match.

Item 8: Please replace the paragraph on page 3, lines 14-19 in the originally filed application with the following paragraph:

It is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways that will be clear to persons of ordinary skill in the art in view of the present disclosure. In addition, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

Item 9: Please replace the paragraph on page 4, lines 10-14 in the originally filed application with the following paragraph:

Skilled artisans appreciate that elements in the figures are illustrated for simplicity and clarity ~~and have not necessarily been drawn to scale. For example, the dimensions of some of the elements in the figures may be exaggerated relative to other elements~~ to help improve ~~to improve~~ understanding of embodiments of the present invention.

Item 10: Please replace the paragraph on page 5, lines 13-22 in the originally filed application with the following paragraph:

One embodiment of the present invention fingerprints spatially resolved time-series data and enables the comparison and characterization of several such data records. For one

application involving processing workpieces such as semiconductor wafers, the data records include temperature data such as data obtainable using a Sensor Wafer with temperature sensing elements embedded on its top surface and is capable of measuring the workpiece temperature trajectory at various spatial locations; the trajectory comprises an array of data which in this embodiment includes temperature as a function of time. A suitable apparatus for use with some embodiments of the present invention is described in U.S. Patent Application No. 09/643,614, filed on 22 August 2000, now U.S. Patent No. 6,691,068.

Please replace the paragraph on page 8, lines 5-9 in the originally filed application with the following paragraph:

Step 70 involves saving transition points and detected intervals. This step completes the ~~fingerprinting the~~ fingerprinting of the data record; the data record is compactly represented using basis functions. The key information is stored for subsequent use. The fingerprint has numerous uses. For example, the fingerprint serves as a representation of the process.

Please replace the ABSTRACT on page 13 in the originally filed application with the following ABSTRACT: